CalPERS Global Real Estate Environmental Initiative Update: Report to the Investment Committee

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Submitted to

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Executive Summary

This report provides an update on environmental efforts by CalPERS' real estate investment partners in 2007. The report concentrates on the following topics:

- Section A reports on the Core real estate portfolio's progress toward the voluntary Energy Efficiency Plan goal of reducing energy consumption by 20% over five years. Over the three years since the environmental initiative began in 2004, there has been a 12.5% total reduction in energy consumption. The attachment to this report entitled "Energy Efficiency Plan Analysis" provides detailed information on the calculation methodology for the analysis of progress toward the Energy Efficiency Plan goal.
- The remainder of this report (Sections B, C, and D) covers green activities undertaken by Core and Non-Core partners in 2007, additional activities planned for 2008, and organization-wide initiatives underway for the partners. These activities represent partners' efforts to continue improving energy efficiency, water efficiency, and waste management practices in their portfolios. The attachment entitled "Qualitative Survey Responses" is a more detailed summary of these efforts. Both attachments are available upon request and will be posted on the CalPERS Web site.

Real estate investment partners' comments have been incorporated into this report. Partners commented that the green activities described in Sections B, C, and D are a very important indicator of overall environmental achievements, because many achievements in the areas of energy and water efficiency and waste management are challenging to quantify. The quantitative analysis of progress toward the Energy Efficiency Plan goal, while a helpful method for communicating the status of the environmental initiative, requires several caveats. CalPERS' real estate portfolio consists of multiple property types and is frequently changing in composition and size, with only a small portion of the portfolio remaining constant since 2004. When distilling energy consumption data across a diverse, dynamic portfolio into a single value, it is important to consider how property type and sample size affect the results. Although JDM created some controls for these issues, the aggregate energy consumption reduction for the portfolio should still be considered a *representative,* rather than absolute, measure of partners' energy efficiency improvements.

A. Report on the Energy Efficiency Plan: Core Portfolio

Quantitative energy usage data for the 2007 calendar year was collected from all Core partners for properties owned in 2007. Complete energy data was received for approximately 70% of the Core buildings that were owned for all of 2007. The majority of the buildings that did not have information to report were industrial properties in which the landlord is not responsible for energy costs. Therefore, those properties did not have access to the requested data. The sub-set of analyzed buildings, and their energy consumption, can be considered a representative sample of the complete portfolio. Energy usage for each of the Core investment partners is detailed in the attachment to this report entitled "Energy Efficiency Plan Analysis."

Changes in energy consumption are calculated on a per-square-foot basis to account for the fact that the size of the portfolio changes each year. The following measures of energy usage were

selected to provide a combination of (a) appropriateness and relevance to each property type, and (b) maximum consistency and simplicity across property types:

- Office – total energy usage per occupied net rentable square foot
- Multifamily – common area energy usage per net rentable square foot
- Industrial – common area energy usage per net rentable square foot
- Retail – common area energy usage per net rentable square foot

Using these measures, 2007 data is compared with energy usage data for 2004 (the baseline year), 2005, and 2006. The previously reported 2005 and 2006 energy reductions were recalculated based on this methodology to provide reasonable comparisons. Additional information on the calculation and analysis methodology is provided in the "Energy Efficiency Plan Analysis" attachment.

The analysis of the 2007 data reveals an 8.9% decrease in electricity consumption and a 10% decrease in gas consumption when compared to 2006 data. Compared with the 2004 energy consumption baseline, the total reduction in electricity usage in the first three years of the CalPERS environmental initiative has reached 13.9% and the total reduction in gas usage has reached 7.4%, for a weighted total reduction in overall energy consumption of 12.5%.

To calculate the total energy reduction, it is necessary to convert kWh to Btu so that they may be combined using a common denominator. Because electricity comprises a greater proportion of portfolio energy usage than gas usage, this yields a more accurate representation of the change in total energy than does summing the percentages of electricity and gas savings. These calculations are detailed further in the "Energy Efficiency Plan Analysis" attachment.

CalPERS should note the following considerations that affect interpretation of the results:

- CalPERS' real estate portfolio is both diverse and dynamic. Property type and sample size significantly affect the year-to-year energy consumption reductions. Though JDM created controls for these issues, the aggregate energy consumption reduction from 2004 to 2007 should still be considered a *representative* measure of energy efficiency improvements.
- An alternative method would be to analyze only those properties that were owned for the entire analysis period (2004 to 2007). This would result in a "same-store" comparison of identical portfolios, avoiding any changes in portfolio composition that could skew the data. However, this approach would significantly limit the sample size, especially for the several partners that sold numerous properties over the past few years. As an illustrative example, BlackRock conducted this alternative analysis for its own portfolio and found an 11% energy consumption reduction for the 19 properties owned from 2004 through 2007 (out of more than 60 properties currently in its portfolio).
- CalPERS established 2004 as the baseline year despite the fact that the energy reduction goal was not announced until the end of that year. As a result, partners may not have been sufficiently prepared to provide 2004 data. Therefore, it was necessary to exclude some outlying 2004 data points from the analysis (particularly in the industrial portfolio), though 2004 was used as the portfolio-wide baseline.

- Since two Core partners (First Washington and GID) did not provide quantitative data for 2005 and 2006, their 2007 data is not included in the aggregate analysis. These two partners' portfolios were shifting, and no properties had 12 months of energy consumption data to report in 2005 or 2006 due to the timing of acquisitions and sales. (Individual properties in other Core partners' portfolios were excluded from the analysis for the same reason in all years of the environmental initiative – only properties with a full 12 months of data are analyzed in each calendar year.) Without a baseline for the purposes of comparison, including First Washington and GID's 2007 data would have yielded a less accurate representation of energy reductions. However, these partners provided 2007 data sufficient for establishing a baseline from which CalPERS can measure future savings.
- BlackRock found that its former utility bill service provider may not have provided accurate data for 2004 through 2006. BlackRock retained a new billing service provider in 2007 with the intent of improving its information and reporting capabilities for CalPERS.
- In some cases, it is necessary to clarify unusual data. For example, the attachment entitled "Energy Efficiency Plan Analysis" shows a significant increase in gas usage in the office portfolio from 2005 through 2007. A portion of this increase can be attributed to an investment partner's replacement of electric heating units with gas heating units, due to the greater efficiency and lower cost of gas heating. Additional partner-specific caveats are provided in the "Energy Efficiency Plan Analysis" attachment.

B. Green Activities Undertaken by Partners in 2007: Core and Non-Core Portfolio

All of the Core partnerships and many Non-Core partnerships responded voluntarily to a qualitative survey. The survey questions covered green activities undertaken in 2007 within the Core and Non-Core (Housing, Senior Housing, and CURE) partnerships. Activities are summarized below. Additional details on each partner's activities can be found in the attachment entitled "Qualitative Survey Responses," along with a glossary of acronyms and terms.

1) Energy Efficiency

Based on survey responses, partners took many steps to increase energy efficiency, including:

- Implementing operational best practices and preventative maintenance programs
- Reducing equipment run-times
- Installing more energy efficient lighting
- Installing occupancy and/or motion sensors on lighting systems
- Replacing inefficient heating, ventilation, and air conditioning (HVAC) systems, components, and water heaters with more efficient units
- Adding insulation
- Upgrading and utilizing Energy Management Systems
- Installing ENERGY STAR appliances

- Applying reflective roof coatings
- Educating tenants and residents on energy conservation
- Eliminating weekend HVAC except by tenant request
- Pursuing ENERGY STAR and Leadership in Energy and Environmental Design (LEED) certification for buildings
- Performing assessments to identify further energy efficiency opportunities

2) WATER EFFICIENCY

In 2007, partners conserved water by:

- Installing low-flow and/or sensor-operated fixtures
- Using smart irrigation controls to adjust watering, based on weather and climate
- Implementing seasonal changes to watering schedules
- Using drought-resistant, native plants
- Identifying and fixing leaks
- Using graywater and retention pond water for irrigation
- Reducing run-times of fountains
- Educating tenants and residents on water conservation

3) WASTE MANAGEMENT

Partners took various steps to reduce waste, such as implementing and maintaining recycling programs, recycling construction and demolition waste, educating tenants and residents on recycling, holding recycling drives and events, using recycled-content paving and construction materials, and monitoring trash/recycling pick-ups for opportunities to reduce hauls.

4) OTHER

Partners took additional environmentally sensitive steps, such as mitigating and treating stormwater runoff, purchasing green-certified products, and using paint with lower levels of Volatile Organic Compounds (VOCs). Furthermore, some partners have investment strategies that focus on redeveloping urban infill sites near public transportation nodes, which contributes to more sustainable communities.

C. Green Activities Planned by CalPERS Partners for 2008: Core and Non-Core Portfolio

The Core and Non-Core partners provided information about the following methods they planned to adopt for 2008. Additional details on each partner's planned activities are provided in the "Qualitative Survey Responses" attachment.

- Continue reviewing buildings for opportunities to increase efficiencies
- Upgrade equipment to more efficient models
- Install additional controls for lighting and HVAC

- Continue to implement operational best practices
- Use monitoring tools to quantify improvements
- Implement and expand recycling programs
- Closely monitor irrigation schedules
- Pursue ENERGY STAR and LEED certifications
- Adopt corporate sustainability plans and best practice guides

D. Organization-Wide Green Initiatives: Core and Non-Core Partners

The Core and Non-Core partners were asked to provide information on green initiatives within their organizations. These initiatives include the following:

- Programs to share best practices that reduce energy, water, and waste
- Portfolio-wide environmental audits
- Corporate-level sustainability teams
- Portfolio-wide goals for ENERGY STAR and LEED certifications
- Green development/redevelopment criteria and other environmentally sensitive development strategies
- Utility monitoring programs
- Considerations for potential renewable energy and green power purchasing programs

Additional information on organization-wide initiatives is provided in the "Qualitative Survey Responses" attachment.

Conclusions

Based on the data provided, CalPERS partners are moving toward the Energy Efficiency Plan goal of reducing energy consumption by 20% within five years. Partners recognize the challenges involved in tracking energy usage and reductions accurately across a diverse portfolio comprised of multiple property types, but their commitment to this effort is largely the reason for its success to date.

CalPERS asked its partners for their feedback on the feasibility of achieving the additional energy reduction necessary to meet the Energy Efficiency Plan goal. The responses generally varied depending on the energy efficiency projects that have already been completed, building type, and degree of control that the partners have over day-to-day operations. In some instances, partners expressed confidence in the ability to meet the remainder of the goal. In other cases, they cautioned that the remainder may not be cost-effective to achieve in certain properties.

Nonetheless, there have clearly been increases in environmental consciousness as partners strive to enhance sustainability across their portfolios. All partners recognize the importance of an industry shift toward environmentally sensitive real estate operations, management, and development. With CalPERS' direction and guidance, partners are in the process of making sustainability a top priority. They continue to explore and implement cost-effective strategies to achieve CalPERS' environmental objectives.